Exhibit 3

EXHIBIT C

UNITED STATES DISCTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

MANBRO ENERGY CORPORATION, Plaintiff, -against- CHATTERJEE ADVISORS, LLC, CHATTERJEE FUND MANAGEMENT, LP, CHATTERJEE MANAGEMENT COMPANY, d/b/a THE CHATTERJEE GROUP, AND PURNENDU CHATTERJEE, Defendants.	C.A. No.: 1:20-cv-03773-LGS

EXPERT SUR-REPLY REPORT OF ANTOINETTE SCHOAR

August 24, 2021

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11. Mr. Brown's opinions regarding comparable company multiples valuation are also flawed. The value of a company derives from its future profits, not revenues. Therefore, valuation based on revenue multiples is generally a "last resort" in cases when valid profit-based multiples are impossible to calculate due to negative profits earned by the company or its peers. Both HPL and its peers were profitable as of the Valuation Date, and therefore calculating valid profit-based multiples was not a concern in this case. For HPL in particular, using revenue-based multiples would likely result in an underestimate of value, as HPL's profit margin was the highest among its peers. Since value depends on future, not past, profits, multiples-based valuations typically rely on recent realizations of profits instead of a long-ranging historical average, especially when past history might not be representative of the future due to various developments. In this case, control over HPL shifted from Government of West Bengal ("GoWB") to TCG in January 2016, an important development which Dr. Chatterjee emphasized improved HPL's management. I discuss Mr. Brown's comparable company multiples valuation in Section VI.

II. MR. BROWN'S 60 PERCENT MARKETABILITY DISCOUNT (ADDED TO EACH OF HIS VALUATIONS) IS INAPPLICABLE AND UNRELIABLY CALCULATED

A. Mr. Brown's Assumption of 12 Years of Transfer Restriction on HPL Stock Is Incorrect

12. As I discussed in my Initial Report and in my Rebuttal Report, I am not aware of any substantive restrictions on the transfer of the HPL shares held indirectly by WPPE.[8]

13. For the first time in the Brown Rebuttal Report, Mr. Brown assigns a 60 percent marketability discount to his valuation estimates, which is the single most impactful

[8] Schoar Report, p. 90; Schoar Rebuttal Report, pp. 12-15.

element of his valuation analysis. The principal basis for this new opinion by Mr. Brown is another new opinion expressed in the Savoldelli Rebuttal Report regarding the purported non-marketability of the HPL shares held indirectly by WPPE members as of the Valuation Date, which Mr. Brown adopts and incorporates into his own analysis.[9]

14. In the Savoldelli Rebuttal Report, Dr. Savoldelli claims that TCG controlled 54.956 percent of HPL's shares, and of that 54.956 percent, non-TCG affiliated WPPE members held 3.957 percent as of the Valuation Date.[10] As a result, he opines that without the shares held indirectly by non-TCG affiliated WPPE members, TCG's equity ownership share in HPL would have been 50.999 percent (which is 54.956 percent less 3.957 percent), and thus would fall short of the 51 percent TCG ownership threshold required by the NDU between HPL and the consortium of Indian banks/lenders by a minuscule 0.001 percent (approximately 16,879 shares).[11]

15. As an initial matter, even if this calculation were correct (and I show below why it is not), it would not support Mr. Brown's conclusion that the HPL shares indirectly held by WPPE could not have been sold for 12 years following the Valuation Date. Among other things, TCG had the option to purchase a further 260 million shares from the GoWB as of the Valuation Date, amounting to a total of 15.4 percent of HPL shares.[12] Exercising this

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9 Brown Rebuttal Report, p. 31 ("Dr. Schoar's unsupported arguments regarding the alleged non-applicability of a discount for lack of marketability are, for their part, addressed in the Savoldelli rebuttal report. As that report describes, Dr. Schoar is incorrect in her conclusion that CMC and TCG could have sold all unencumbered shares of HPL that they held or controlled and distributed the proceeds of that sale only to Manbro or to outside investors in WPPE."). Since Mr. Brown's valuation analyses rely on this aspect of the Savoldelli Rebuttal Report, I find it necessary to address Dr. Savoldelli's opinions regarding this narrow matter in order to respond to the new opinions in the Brown Rebuttal Report. Because I understand that the scope of this sur-reply report is to respond to the new valuation opinions contained in the Brown Rebuttal Report, I do not otherwise respond to the opinions expressed in the Savoldelli Rebuttal Report. No inference should be drawn that my lack of response to any such opinion indicates my agreement with Dr. Savoldelli's opinions.

10 Savoldelli Rebuttal Report, pp. 6-7.

11 Savoldelli Rebuttal Report, pp. 6-7.

12 Schoar Report, p. 27.

option would have completely eliminated any of the supposed concerns discussed in the Savoldelli Rebuttal Report regarding whether a sale of outside investor' HPL shares to third parties would have jeopardized TCG's 51 percent control of HPL. In fact, TCG exercised this option in September 2018, just 18 months after the Valuation Date, increasing its ownership share to over 70 percent.[13]

16. There are additional reasons described in my Initial Report why there were no meaningful sale restrictions. For example, I noted in my Initial Report that "I have not seen anything preventing a sale of the shares of CPMC and ITML, through which Manbro's indirect interests in HPL were held, as of the Valuation Date."[14] Neither Mr. Brown nor Dr. Savoldelli has identified any such restriction either.

17. In any event, I disagree with Dr. Savoldelli's opinion, on which the Brown Rebuttal Report relies, that without the shares held indirectly by non-TCG affiliated WPPE members TCG would not have controlled at least 51 percent of HPL's shares.

18. First, Dr. Savoldelli's calculation that WPPE's outside investors held 3.957 percent of HPL shares as of the Valuation Date demonstrably overstates the ownership stake of WPPE's outside investors in HPL. The reason is that Dr. Savoldelli incorrectly attributes HPL shares to non-TCG affiliated WPPE members that had been abandoned on December 31, 2016, months before the Valuation Date.

19. Specifically, Dr. Savoldelli calculates the 3.957 percent figure by "add[ing] the numbers of shares for the rows marked 'TCG SHARES - WINSTON LLC' in column E" of Tab "Detailed Haldia Shareholding" in a document produced by the Defendants bearing the

13 Schoar Report, p. 28.
14 Schoar Report, p. 92.

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Bates stamp TCG_0064273.[15] This tally includes 3,623,255 HPL shares held by the "[redacted]" equivalent to 3.68 percent of WPPE's indirect holding of 98,482,695 HPL shares. However, the spreadsheet TCG used for the May 2017 Final Distribution of WPPE's investors makes it clear that the [redacted] abandoned its investment in WPPE on December 31, 2016.[16] The same spreadsheet notes that the abandoned [redacted] shares were redistributed among general and limited partners of WPPE pro rata. This pro rata distribution decreased outside investors' overall share of WPPE, as TCG owned over 30 percent of WPPE.[17] Correcting this error by Dr. Savoldelli by reallocating over 30 percent of the 3,623,255 HPL shares held indirectly by the [redacted] to TCG—which would equal 1,086,977 shares when conservatively assuming exactly 30 percent—is more than enough to overcome the purported deficit of approximately 16,879 shares needed for TCG to retain at least 51 percent ownership based on Dr. Savoldelli's calculations. Therefore, even if Dr. Savoldelli were correct that TCG controlled only 54.956 percent of HPL's shares, selling the HPL shares held indirectly by non-TCG affiliated WPPE members would not have caused TCG's ownership share of HPL to drop below 51 percent.[18]

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15 Savoldelli Rebuttal Report, footnote 18.

16 May 2017 Final Distribution NAV Calculation Spreadsheet, TCG_0003983 ("Final Distribution Spreadsheet"), at cell B50 of "Actions" tab.

17 At the time of the May 2017 Final Distribution, Chatterjee Advisors, as Class B investors, were attributed 2.019 percent of NAV pertaining to WPPE's "PE(1)" balance sheet, which contained the HPL shares, and Chatterjee Fund Investors, as Class C investors, were attributed 30.651 percent. *See* Final Distribution Spreadsheet, at cells B40, B41, L40, L41 of "NAV share calculation" tab; Schoar Report, footnote 306. I also note that the total NAV for WPPE as a whole is calculated as $18,345,349.11 for May 2017 Final Distribution, of which $383,370.30 is attributed to Class B investors (Chatterjee Advisors) and $5,991,338.96 is attributed to Class C investors (Chatterjee Fund Investors). That implies the two TCG affiliated firms were attributed 35 percent—calculated as ($383,370.30 + $5,991,338.96) / $18,345,349.11—of WPPE's total NAV. *See* Final Distribution Spreadsheet, at cells B43, B44, B46 of "Totals" tab.

18 At the time of the Final Distribution, WPPE's outside investors (including Manbro) received $11,970,639.85, but the total (including general partner) was $18,345,349.11. *See* Final Distribution Spreadsheet, at cells B38 and B46 of "Totals" tab. This implies approximately 65.25 percent (= $11,970,639.85 / $18,345,349.11) of HPL shares are attributable to WPPE's outside investors. Taking Dr. Savoldelli's 98,482,695 HPL shares as

20. Second, in my Initial Report, I estimate that TCG controlled approximately 56.3 percent of HPL,[19] whereas Dr. Savoldelli claims that TCG controlled 54.956 percent of HPL shares.[20] The discrepancy between our views is due to different interpretations as to whether the "Others" listed on the share ownership list TCG shared with third parties and described as "part of TCG portfolio"[21] were in fact controlled by TCG. Dr. Savoldelli opines that only a small portion of these entities were controlled by TCG, based on off-the-record discussions with Dr. Chatterjee.[22] I am not in a position to evaluate these off-the-record discussions, which are not described or summarized in the Savoldelli Rebuttal Report. Dr. Savoldelli also cites (and overstates) unclear deposition testimony by Dr. Chatterjee in support of his view.[23] Furthermore, Dr. Savoldelli's claim that TCG controlled only 54.956 percent of HPL shares is inconsistent with several other sources I have reviewed, including HPL's FY 2016 audited financial statements, which stated that TCG had "over 55% control of the Company,"[24] deposition testimony that "The Chatterjee Group held 56.28 percent of

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belonging to WPPE and multiplying by 65.25 percent results in 64,261,567 HPL shares as belonging to WPPE's outside investors, which is equivalent to 3.807 percent of total HPL shares. 54.956 percent of HPL shares held by TCG (according to Dr. Savoldelli) minus 3.807 percent held by WPPE's outside investors is approximately 51.149 percent.

19 Schoar Report, p. 29.

20 Savoldelli Rebuttal Report, p. 6.

21 Chatterjee Deposition, Exhibit 9A, TCG_0111192-94, at 92. This document was an attachment to an email from TCG employee Sanjay Darolia to naphtha supplier Trafigura. *See* Chatterjee Deposition, Exhibit 9, TCG_0111191; Schoar Report, p. 34.

22 Savoldelli Rebuttal Report, p. 5.

23 Discussing the "Others" described as part of TCG portfolio, Dr. Savoldelli writes, that Dr. Chatterjee "explained that those shares were owned by numerous small shareholders that were known to TCG, but not controlled by TCG." Savoldelli Rebuttal Report, footnote 13. Dr. Chatterjee's deposition testimony is in fact less categorical:
"Q. And which entities constitute "others," as you described it here?
A. … in that we can give you the details who they are, but there are numerous small shareholders.
Q. Did they have any relationship with The Chatterjee Group?
A. They are all known to us but not necessarily our -- you know, we -- the known people but **not necessarily controlled by TCG**." Chatterjee Deposition, pp. 141-142 (emphasis added).

24 HPL's FY 2016 Annual Report noted that following the closing of the first tranche of the 2014 Share Purchase Agreement, TCG had "over 55% control of the Company[.]" *See* HPL Annual Reports for FY 2016, TCG_0010377-534 at 391.

Haldia equity shares,"[25] as well as contemporaneous emails by TCG employees,[26] and contemporaneous interviews of Dr. Chatterjee.[27] Dr. Savoldelli does not even attempt to reconcile his conclusion with this evidence (nor does Mr. Brown).

21. In summary, neither the Brown Rebuttal Report, nor the Savoldelli Rebuttal Report on which it relies has provided evidence that there were meaningful restrictions on the sale of the HPL shares held indirectly by WPPE as of the Valuation Date. The Brown Rebuttal Report and the Savoldelli Rebuttal Report especially provided no evidence that any purported restrictions would have been in place for 12 years from the Valuation Date, as the Brown Rebuttal Report assumes as justification for applying a discount for lack of marketability.[28] Accordingly, the Brown Rebuttal Report fails to provide any evidence supporting the applicability of any discount for lack of marketability, let alone the enormous 60% discount Mr. Brown calculates, which is further discussed below.

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25 Krishnan Deposition, p. 43.

26 Chatterjee Deposition, Exhibit 9A, TCG_0111192-94, at 92.

27 "Once a Defunct Co, HPL Now Aims to Regain Glory Under Purnendu Chatterjee," *The Economic Times*, January 25, 2016, available at https://economictimes.indiatimes.com/industry/indl-goods/svs/petrochem/once-a-defunct-co-hpl-now-aims-to-regain-glory-under-purnendu-chatterjee/articleshow/50714360.cms?from=mdr ("[Dr. Chatterjee] has just got his life back, with the state government part of its stake at HPL to [Dr. Chatterjee], who is now the single largest shareholder at 56%, and the state committed to sell the balance 23.6% also to him in due course -which will see The Chatterjee Group (TCG) of [Dr. Chatterjee], a humongous 80% stakeholder in HPL.").

28 Even accepting all the arguments in the Savoldelli Rebuttal Report, by September 2018, after completing the purchase of additional 260 million shares to increase TCG's ownership share of HPL to over 70 percent and achieving additional profitable fiscal year for FY 2018, TCG would no longer have been constrained in either disposing HPL shares held indirectly by outside investors in TCG-controlled funds, or in pursuing an IPO for HPL.

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B. Applying a Marketability Discount Would Transfer Value from WPPE Members to TCG and Dr. Chatterjee

22. As I discussed in my Rebuttal Report,[29] and affirmed by the Savoldelli Rebuttal Report,[30] TCG and Dr. Chatterjee were long-term shareholders of HPL. As a long-term shareholder with no apparent intent to sell, marketability was unlikely to be a major concern to TCG. A long-term, controlling shareholder derives value primarily from the cash flows of the company, as modeled by the DCF approach outlined in my Initial Report.[31] Therefore, applying a marketability discount in a transfer of HPL shares from WPPE to TCG would result in a transfer of value from WPPE members to TCG for the reasons explained in my Rebuttal Report.

C. Mr. Brown's Application of Restricted Stock Studies for Estimating DLOM Is Flawed

23. The Brown Rebuttal Report repeats the claim made in the Brown Report that "prior restricted stock studies have concluded marketability discounts ranging from 10.9% to 50.0% for holding periods of two years or less[.]"[32] As I discuss in my Rebuttal Report, the restricted stock studies cited by Mr. Brown: (i) report a wide range of marketability discounts that often includes zero or negative values, (ii) are based on US firms with revenues often much smaller than HPL, and (iii) generally show that the smaller the company, the larger the marketability discount.[33] In other words, "the circumstances of the

29 Schoar Rebuttal Report, p. 19.
30 Savoldelli Rebuttal Report, p. 15 ("TCG worked for over 20 years to obtain a controlling block of HPL shares").
31 *See* Schoar Report, Section V.D. *See also*, Schoar Rebuttal Report, pp. 19-20.
32 Brown Rebuttal Report, p. 36.
33 Schoar Rebuttal Report, pp. 17-18.

restricted stock considered in the studies cited by Mr. Brown do not parallel the circumstances of the HPL stock held indirectly by WPPE."[34]

D. Mr. Brown's Application of the Longstaff Model for Estimating DLOM Is Flawed

24. In a new attempt to quantify the purported discount for lack of marketability, the Brown Rebuttal Report uses the "Transformed Longstaff Model" to estimate a 58.2 percent DLOM (which Mr. Brown rounds up to 60 percent in his valuation), under the flawed assumption that the shares held indirectly by WPPE were restricted from transfer for 12 years.[35] In doing so, Mr. Brown misuses the model developed by Longstaff (1995) (the "Longstaff Model"),[36] which in any event is not applicable to estimating DLOM at the 12 year horizon of transfer restrictions assumed by Mr. Brown.

25. The Longstaff Model estimates an *upper bound* to a DLOM by calculating the expected value that a hypothetical investor with *perfect* market timing would give up by being unable to sell the security at its highest value during the period of trade restrictions.[37] Since no investor is blessed with perfect foresight, this upper bound is a theoretical limit that cannot be attained by any real-world investor, regardless of sophistication.[38]

26. The Longstaff Model estimates the value given up by a hypothetical investor with perfect market timing ability due to the inability to sell at the most opportune time during the restriction period. The Longstaff Model estimates the value given up by the hypothetical

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34 Schoar Rebuttal Report, p. 18.

35 Brown Rebuttal Report, pp. 36-37, Exhibit 7.

36 Longstaff, Francis A., "How Much Can Marketability Affect Security Values?" *The Journal of Finance* 50, (1995), pp. 1767-1774 ("Longstaff (1995)").

37 Longstaff (1995), pp. 1768-1769.

38 Therefore, Mr. Brown's suggestion that Manbro, by virtue of being a "sophisticated investor," would have "ideal market-timing ability" and thus attain the upper bound is incorrect. Brown Rebuttal Report, p. 37 ("Consistent with my understanding that Manbro is a sophisticated investment firm, the Longstaff Model assumes that the ultimate owner of the restricted shares possesses ideal market-timing ability").

investor as a function of the current intrinsic value of the shares (V), the time horizon of transfer restrictions (T), and the expected volatility of the asset's value (σ). In mathematical notation, the value given up by the hypothetical investor can be written as $V \times f(T, \sigma)$.[39] For an investor with perfect market timing ability, the value of an asset that is restricted from trade (v) can be expressed as the difference between the intrinsic value of the asset and the value lost due to the inability to trade during the restriction period:

$$
\begin{aligned}
v &= V - V \times f(T, \sigma) \\
&= V \times \big(1 - f(T, \sigma)\big).
\end{aligned}
$$

Therefore, $f(T, \sigma)$ can be interpreted as an upper bound to a DLOM in the Longstaff Model. This upper bound increases in both the time horizon of the restrictions T, and the volatility of asset value σ, as both increase the maximum value at which an investor with perfect market timing ability would be able to sell the asset during the trade restriction period.

27. Over a sufficiently long horizon, the value of a volatile asset can (at least momentarily) reach very high levels, increasing the payoff an investor with perfect market timing would expect to forego due to sale restrictions. In fact, this expected foregone payoff can exceed the current intrinsic value of the asset. In such cases, the upper bound to the DLOM implied by the Longstaff Model exceeds 100% (in other words, implying that the lack of marketability makes the asset worth less than zero), making the model uninformative for estimating the DLOM. Given the volatility σ assumed by Mr. Brown, the upper bound estimated by the Longstaff Model exceeds 100% beyond approximately 7.25 years of sales

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39 The function $f(T, \sigma)$ can be further expanded to $\left(2 + \frac{\sigma^2 T}{2}\right) N\left(\frac{\sqrt{\sigma^2 T}}{2}\right) + \sqrt{\frac{\sigma^2 T}{2\pi}} \exp\left(-\frac{\sigma^2 T}{8}\right) - 1$. *See* Longstaff (1995), p. 1770, Equation (3).

restrictions,[40] and implies an uninformative upper bound of 139 percent (*i.e.*, negative value) for 12 years of transfer restrictions.[41] I note that Longstaff (1995) did not consider horizons beyond 5 years for the application of his model,[42] and evaluated his model's performance based on 2 years of transfer restrictions.[43]

28. In an attempt to "fix" the problem of the uninformative upper bound that exceeds 100 percent, certain practitioner literature cited by Mr. Brown has proposed a "Transformed Longstaff Model" DLOM, calculated as $\frac{f(T,\sigma)}{1+f(T,\sigma)}$. While this *ad hoc* transformation does mechanically produce a number between 0 and 100 percent, the result can no longer be interpreted in any meaningful sense as an estimate of DLOM. In particular, Mr. Brown cites a practitioner textbook and an article published in the practitioner journal *Business Valuation Review* as the "[r]elevant literature" supporting this transformation.[44] However, the "relevant literature" on the Longstaff Model is Longstaff's article published in the pre-eminent *Journal of Finance* that introduced the model. Longstaff advocated for no such transformation.

29. There are further reasons that the Longstaff Model, or similar option pricing models of DLOM, are not applicable in this case. First, the model takes volatility as a given parameter, even though in this case it is dependent on the strategic business decisions made by the controlling shareholder, TCG.[45] The model also assumes that the company does not

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40 I use Mr. Brown's underlying workbook for this calculation. *See* Brown Rebuttal Report Backup, TCG_0225851, at "Exhibit 7" tab. Specifically, I change the value in cell C19 to 7.25 years to obtain that the upper bound (cell F19) is 100.15 percent.

41 Brown Rebuttal Report, Exhibit 7.

42 *See* Longstaff (1995), p. 1772, Table 2.

43 *See* Longstaff (1995), pp. 1772-1773.

44 Brown Rebuttal Report, Exhibit 7, Note [3].

45 For example, a large, risky acquisition, such as HPL's acquisition of Lummus Technology in 2020, would likely increase the expected volatility of the company's asset value. Taking the Longstaff Model (or similar option pricing models of DLOM) at face value, such an action would therefore increase the calculated DLOM.

pay dividends. Cash payouts provide liquidity to investors, and therefore decrease the cost of sale restrictions; they are also under the discretion of the controlling shareholder.[46] Lastly, the Longstaff Model, as well as similar option pricing models of DLOM, consider the cost of illiquidity to a short-term investor who would, in the absence of sale restrictions, be looking to profit from temporary price increases. In contrast, as I discussed in my Rebuttal Report, I understand that TCG was a long-term investor that spent twenty years attempting to gain control of HPL with the aim of improving the business over the long term.[47]

30. Mr. Brown also quotes practitioners such as Shannon Pratt to suggest that restricted stock studies and option pricing models understate the DLOM for private companies, as they assume that after the restriction period, the stock will be freely traded on a public stock exchange, whereas private company stock will remain illiquid.[48] However, these statements assume that the company will remain private after the end of the period of sale restrictions, and that whether the company is public or private is a state over which investors have no control. In this case, however, whether HPL remained private was largely under the control of Defendants, who had fiduciary duties toward WPPE investors.

46 I note that Shannon Pratt, on whom Mr. Brown relies, lists the ability to "[d]eclare and pay cash and/or stock dividends" as item 12 in the "Elements of Control." Pratt, Shannon P., and Alina V. Niculita, *Valuing a Business: The Analysis and Appraisal of Closely Held Companies*, 5th Ed. (2008), McGraw-Hill ("*Valuing a Business*"), p. 385.

47 Schoar Rebuttal Report, p. 19. *See also* Savoldelli Rebuttal Report, p. 15 ("TCG worked for over 20 years to obtain a controlling block of HPL shares in order to be able to run the company's operations effectively.").

48 Brown Rebuttal Report, pp. 39-41.

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III. MR. BROWN'S 20 PERCENT MINORITY DISCOUNT (ADDED TO HIS DCF VALUATION) IS INAPPLICABLE AND UNRELIABLY CALCULATED

31. A fundamental principle of finance theory is that the value of an asset equals the present value of the cash flows the asset is expected to generate in the future. As I discussed in both my Initial Report and Rebuttal Report, a "minority discount" will generally exist if minority shareholders do not expect to participate ratably in the firm's future cash flows, *i.e.*, if the controlling shareholder is expected to extract disproportionate cash flows from the firm.[49] As I discussed in my Initial Report and Rebuttal Report,[50] I understand that Dr. Chatterjee has represented that he took his fiduciary duties toward all his investors seriously, and therefore would not expect a minority discount to apply to HPL's minority shareholders. Consistent with this view, Dr. Savoldelli noted that "improvement of HPL's performance, which TCG planned to achieve with control, would have benefitted all HPL investors[.]"[51] I note that in the context of the Final Distribution, applying a minority discount to the value of the HPL shares held indirectly by WPPE investors would shift value from the minority to the majority shareholder, and therefore in fact result in a non-ratable benefit for the majority shareholder.

32. Regardless of the applicability of a minority discount in the particular case of TCG's purchase of the HPL shares held indirectly by WPPE investors, Mr. Brown's method for estimating the average minority discount based on change-of-control transactions is flawed. Mr. Brown estimates the "minority discount" based on the difference between the price paid in acquisitions of public firms, and the share price of the same firms before the

49 Schoar Report, pp. 93-94; Schoar Rebuttal Report, pp. 20-22.
50 Schoar Report, p. 94; Schoar Rebuttal Report, p. 22.
51 Savoldelli Rebuttal Report, p. 15.

acquisitions were publicly known (the "unaffected price").[52] However, the premium paid relative to the unaffected price is in general a function of the expected value added by the acquirer, not a function of whether minority and majority shareholders are expected to receive different cash flow streams.[53] Indeed, Mr. Brown's methodology is unsupported by academic research, which shows that the difference between the expected cash flows attributable to minority and majority shareholders in change-of-control transactions should be estimated based on the difference between the transaction price and the *post*-announcement trading price, not the unaffected (*i.e.*, pre-announcement) price.[54] Since the post-announcement price incorporates expectations of the value added by the acquirer, the premium estimated in this manner is generally smaller than the premium relative to the unaffected price. In fact, academic research shows that in countries with strong protections for minority shareholders such as the U.S., the acquisition premium relative to the post-announcement price is close to zero.[55]

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52 Brown Rebuttal Report, p. 35.

53 In general, there can be many reasons for an acquirer to be willing to pay a premium for a firm. The acquirer might expect to implement operational improvements, and therefore increase the value of the firm, expect the acquisition to generate synergies, believe the target to be undervalued, or be influenced by over-confidence. On average, empirical evidence suggests that the target firm's shareholders are able to extract most, if not all, of the surplus expected by the acquirer. *See*, *e.g.*, Andrade, Gregor, Mark Mitchell, and Erik Stafford, "New Evidence and Perspectives on Mergers," *Journal of Economic Perspectives* 15, (2001), pp. 103-120, at 103 ("a profusion of event studies has demonstrated that mergers seem to create shareholder value, with most of the gains accruing to the target company").

54 *See*, *e.g.*, Barclay, Michael J., and Clifford G. Holderness, "Private Benefits from Control of Public Corporations," *Journal of Financial Economics* 25, (1989), pp. 371-395 ("Barclay and Holderness (1989)"); Dyck, Alexander, and Luigi Zingales, "Private Benefits of Control: An International Comparison," *The Journal of Finance* 59, (2004), pp. 537-600 ("Dyck and Zingales (2004)"), at 538 ("The price per share an acquirer pays for the controlling block reflects the cash flow benefits from his fractional ownership and the private benefits stemming from his controlling position in the firm. By contrast, the market price of a share after the change in control is announced reflects only the cash flow benefits noncontrolling shareholders expect to receive under the new management. Hence, as Barclay and Holderness have argued, the difference between the price per share paid by the acquiring party and the price per share prevailing on the market reflects the differential payoff accruing to the controlling shareholder.").

55 *See*, *e.g.*, Dyck and Zingales (2004), Table II; Schoar Rebuttal Report, pp. 20-21.

33. To illustrate the flawed nature of Mr. Brown's method of estimating the average minority discount, consider a transaction in which Company A purchases Company B for $150 per share. Suppose that before the announcement of the acquisition, Company B's shares traded at $100 per share. In this case, Mr. Brown's methodology would estimate that there was a control premium of 50 percent, and an implied minority discount of 33 percent.[56] However, all existing shareholders received $150 per share in the acquisition, regardless of whether they were minority or majority shareholders. Mr. Brown's methodology would estimate the same 50 percent control premium if the acquirer purchased less than 100 percent of the target's shares, even if the remaining (*i.e.*, minority) shares subsequently traded at the same $150 acquisition price (*i.e.*, at no discount), consistent with an expectation that the value added by the acquirer would be shared ratably with minority shareholders.[57]

34. Mr. Brown's determination that a 20 percent minority discount should apply to the HPL shares held indirectly by HPL is also inconsistent with the data he produced in this matter alongside the Brown Rebuttal Report. While Mr. Brown did not disclose any data underlying any of the minority discount estimates he discusses and cites on pp. 35-36 of the Brown Rebuttal Report, he did disclose data on a set of 38 change-of-control transactions involving Indian target companies in the five years before the Valuation Date.[58] Oddly, the Brown Rebuttal Report includes no discussion of these transactions, which imply a median "minority discount" (using Mr. Brown's methodology) of 11.8

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56 Calculated as $1 - \frac{1}{1+control\ premium}$, consistent with Mr. Brown's methodology. *See* Brown Rebuttal Report, footnote 100 ("A 26% control premium implies a discount for lack of control equal to [1-[1/(1 + 26%)]] = 20.6%").

57 In such an instance, the academic methodology discussed in Barclay and Holderness (1989) and Dyck and Zingales (2004) would correctly indicate a "minority discount" of zero.

58 Brown Rebuttal Report Backup, TCG_0225849.

percent, and a mean minority discount of -39.8 percent. While this average is influenced by outliers, it is the case that 13 of the 38 transactions (*i.e.*, over one third of the transactions) occurred at a *negative* implied control premium according to Mr. Brown's methodology. If nothing else, this wide range of purported control premia implied by Mr. Brown's methodology demonstrates its unreliability.

35. In any event, as I previously explained, the comparable company multiples valuation analysis I used in my Initial Report already takes into account minority discounts, if there are any, because it is based on the observed prices of non-controlling shares of publicly traded comparable companies.[59] Mr. Brown's assertion that this contradicts my opinion that a minority discount should not be applied to valuations of HPL's shares is incorrect.[60] I am not saying that the shares of publicly traded comparable companies trade at a minority discount to controlling shares. I am merely pointing out that even if a minority discount existed, there would be no theoretical or empirical basis to apply any further minority discount to the value of HPL shares estimated using the comparable company multiples approach.

IV. MR. BROWN'S OPINIONS ON TRANSACTIONS AFTER THE VALUATION DATE ARE FLAWED

36. Mr. Brown claims that "[a]ctual transactions in HPL shares provide the best indication of their value"[61] and discusses the following four completed or attempted transactions: (1)

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59 Schoar Report, p. 94; Schoar Rebuttal Report, pp. 22-23.

60 Brown Rebuttal Report, p. 30 ("Paradoxically, Dr. Schoar states in paragraph 165 of her report that minority shares in companies do not reflect a material non-control discount, but at the same time states in paragraph 166 that her comparable company analysis reflects a noncontrolling value. In short, Dr. Schoar attempts to use a theory to justify attributing no value to control, but at the same time acknowledges that market values reflect a discount for lack of control in minority transactions in publicly traded shares.").

61 Brown Rebuttal Report, p. 46.

TCG affiliate Inventage's purchase of 36,140,935 HPL shares held by various HPL lenders between September 2017 and June 2018;[62] (2) Inventage's purchase of 2,000,000 HPL shares held by relatives of Vijay Chaudhry in January 2018;[63] (3) sale of shares in Chatterjee Petrochemicals LDC—one of TCG holding companies that held HPL shares—by Geosor Corporation and Quantum Industrial Partners LDC on June 15, 2018;[64] and (4) two failed auctions involving 27,128,521 HPL shares held by Industrial Development Bank of India ("IDBI") in September 2018 and July 2019.[65]

37. As an initial matter, all of the transactions (both completed and attempted) referenced by Mr. Brown occurred 6 to 28 months after the Valuation Date, and therefore should not be relied on, especially since—as Defendants' expert Dr. Savoldelli attests—"HPL's profitability steadily declined after the end of FY2017."[66] Mr. Brown cites three direct quotes from various textbooks in support of his erroneous claim that "transactions, or attempted transactions, in HPL shares that occurred within a year of the Valuation Date … provide strong indications of the value of the shares."[67] However, Mr. Brown misrepresents the fact that these three quotes clearly refer to past transactions only, not ex-post transactions. In fact, the first quote is from a subsection titled "List of *Past* Transactions in the Stock or Offers to Buy,"[68] the second quote is from a subsection titled

62 Brown Rebuttal Report, pp. 42-43.
63 Brown Rebuttal Report, p. 43.
64 Brown Rebuttal Report, pp. 43-44.
65 Brown Rebuttal Report, p. 43.
66 Savoldelli Rebuttal Report, p. 3. *See also*, Schoar Rebuttal Report, p. 29.
67 Brown Rebuttal Report, p. 42.
68 *Valuing a Business*, pp. 87-88 (emphasis added). *See also* Brown Rebuttal Report, p. 42.

"*Past* Subject Company Transactions,"[69] and the third quote is from a subsection titled "*Prior* Transactions in the Company's Stock."[70]

38. Even more importantly, executed transactions can be indicative of an asset's fair market value only to the extent that the transactions were executed at arm's length, as acknowledged by Mr. Brown himself,[71] and both buyer and seller have sufficient information about the asset to arrive at a reasonable estimate of value. In fact, a textbook cited extensively by Mr. Brown stresses that "[i]n preparing the record of past transactions or offers, it is important to list any relationships among the parties in order to determine whether each transaction was at arm's length."[72] In other words, "a price would not be considered representative of fair market value if influenced by special motivations not characteristic of a typical buyer or seller."[73] I also note that the same textbook defines fair market value as "the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, *acting at arm's length in an open and unrestricted market*, when neither is under compulsion to buy or sell and *when both have reasonable knowledge of the relevant facts*."[74]

39. Mr. Brown provides no evidence that any of the four transactions he references in his rebuttal satisfies the criteria discussed above to be considered an indication of HPL share's market value. Despite this deficiency, Mr. Brown assigns 40 percent weight to these ex-

69 *Valuing a Business*, p. 318 (emphasis added). *See also* Brown Rebuttal Report, footnote 120.
70 Hitchner, James R., *Financial Valuation*, 4th Ed. (2017), John Wiley & Sons ("*Financial Valuation*"), p. 864 (emphasis added). *See also* Brown Rebuttal Report, p. 42.
71 Brown Rebuttal Report, pp. 41-42.
72 *Valuing a Business*, pp. 87-88.
73 *Valuing a Business*, p. 42.
74 *Valuing a Business*, p. 1071 (emphasis added).

post transactions in his weighted average calculation of the HPL equity value,[75] while completely disregarding contemporary valuations done by Grant Thornton, ValueScope, and Sharp & Tannan "which reflect calculated HPL per-share values ranging from [redacted][76] and TCG employee Sanjay Darolia's assessment in April 2015 that HPL's share value could exceed INR 100 per share if EBITDA in the next two years could rise to USD 420 million (which was achieved by end of FY 2017).[77] I discuss each of the transactions discussed in the Brown Rebuttal Report below.

A. Transactions Between Inventage and HPL's Lenders

40. As an initial matter, the INR 25.1 per share price paid to the lenders by Inventage was based on the 2012 Indian Oil Corporation Limited ("IOCL") bid for GoWB's equity stake in HPL.[78] This same bid was also used as the price for the September 2014 Share Purchase Agreement between TCG and GoWB that enabled TCG to obtain the majority shareholder status upon completion of the transfer of the first tranche in January 2016.[79] In other words, TCG repurchased lenders' HPL shares at a price that was determined through a bidding process in 2012, five years prior to the Valuation Date.

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75 Brown Rebuttal Report, Figure 10.

76 Brown Rebuttal Report, p. 41 ("In connection with my analysis of Dr. Schoar's valuation of HPL, I also reviewed the Grant Thornton, ValueScope, and Sharp & Tannan Reports that Dr. Schoar references in her report. I note that the Grant Thornton, ValueScope, and Sharp and Tannan Reports, which reflect calculated HPL per-share values ranging from [redacted] do not properly consider the marketability constraints on the WPPE HPL shares – namely, the approximately 12-year holding period on TCG's holdings as of the Valuation Date. The reports also fail to properly address other considerations discussed in this rebuttal report. As such, these reports do not accurately assess the fair market value of the WPPE HPL shares as of the Valuation Date.").

77 Schoar Report, p. 34.

78 Schoar Report, p. 32.

79 Schoar Report, p. 33.

41. Furthermore, TCG and the lenders settled on the INR 25.1 per share repurchase price in January 2016.[80] At this time, HPL had yet to report a profit after several years of negative EBITDA.[81] January 2016 was also the month that TCG became the majority and controlling shareholder of HPL.[82] In other words, the INR 25.1 per share repurchase price pre-dates the Valuation Date by 14 months, was negotiated before HPL's record FY 2016 and FY 2017 profits were known, and before any operational improvements from TCG's control would have become apparent. In general, Mr. Brown offers no evidence of what information the lenders had in January 2016 when they agreed to the INR 25.1 per share repurchase price. In other words, Mr. Brown does not point to any evidence that the price Inventage paid the lenders provides a reasonable indication of the value of the HPL shares as of the Valuation Date.

B. Transactions Between Inventage and Relatives of Vijay Chaudhry

42. Mr. Brown offers no evidence that the January 2018 transactions in which Inventage purchased 2,000,000 shares from relatives of Vijay Chaudhry—10 months after the Valuation Date—were arm's length transactions. The documents cited by Mr. Brown regarding these transactions only show the bank account information and transaction receipt.[83] These documents show no evidence that there was any arm's length negotiation that occurred between TCG and Mr. Chaudhry's relatives, and contains no information on how much knowledge of relevant facts the latter possessed. In fact, Vijay Chaudhry

80 Brown Rebuttal Report, pp. 42-43.

81 Schoar Report, Figure 5.

82 Schoar Report, pp. 27-28.

83 Email from Vijay Chaudhry to Sanjay Darolia and Sekhar Krishnan re: "Fwd: Re Buy out of 2m HPL shares," January 24, 2018, TCG_0011481-83 at 81; State Bank of India Account Information, TCG_0011484; Emails between Sekhar Krishnan and Radhe Shyam re: "FW: HPL share buyout of 1m shares," January 29, 2018, TCG_0182489-90 at 89; HPL Shares Sale Invoice, January 23, 2018, TCG_0182492.

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himself—a director of HPL, and a long-time employee of and/or consultant to Dr. Chatterjee, who presumably had more knowledge of relevant facts than his relatives—has held 4,500,000 HPL shares (0.27% of HPL shares) since at least FY 2015.[84] As of HPL's FY 2020 annual report, Mr. Chaudhry has yet to sell any of his HPL shares.[85]

C. Transactions with Geosor Corporation and Quantum Industrial Partners LDC

43. Mr. Brown does not provide evidence that TCG's June 15, 2018, transaction—more than a year after the Valuation Date—to purchase shares of Chatterjee Petrochemicals LDC held by Geosor Corporation and Quantum Industrial Partners LDC—which Mr. Brown refers to as the "Soros Transaction"[86]—was an arm's length transaction. In 1994, an MOU was signed between Soros Fund Management, Chatterjee Fund Management, WBIDC, and Tata group for implementation of an HPL complex.[87] At the time, Dr. Chatterjee was "at the helm of Soros' billion-dollar Quantum India Fund."[88] Given the past relationship between Dr. Chatterjee and Quantum (and other Soros related funds), these transactions were likely not arm's length transactions between independent sellers and buyers.

44. In addition, the TCG_0064273 file Dr. Savoldelli used in his rebuttal report to calculate the number of HPL shares attributable to TCG as of the Valuation Date classifies the HPL

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84 HPL Annual Report for FY 2015, TCG_0104098-176 at 144. *See also* Aronowitz 30(b)(6) Deposition, p. 126; Chatterjee Deposition, pp. 158-159.

85 HPL Annual Report for FY 2020, TCG_0224934-5158 at 5020.

86 Brown Rebuttal Report, pp. 43-44.

87 "Major Milestone," *Haldia Petrochemicals Ltd.*, accessed on May 24, 2021, available at https://www.haldiapetrochemicals.com/major-milestone; Chatterjee Deposition, pp. 80-81.

88 Nameth, Louise, and Joan Warner, "Passage to India, Compliments of George," *Bloomberg*, January 22, 1995, available at https://www.bloomberg.com/news/articles/1995-01-22/passage-to-india-compliments-of-george.

shares held by "QIP" and "Geosor" as "TCG Shares."[89] In other words, TCG internally treated these two funds akin to TCG affiliates rather than independent entities.

45. Moreover, Mr. Brown offers no evidence that Soros related funds performed due diligence of HPL and, therefore, were adequately informed about the transaction.

D. Failed Auctions by IDBI

46. In September 2018 and July 2019, IDBI conducted an auction process for its 27,128,521 HPL shares. Sudha Commercial Company Limited ("Sudha"), acting on behalf of TCG, submitted the highest bid at INR 13.05 per share for the first auction and INR 14 per share for the second auction. IDBI declined to sell its HPL shares to Sudha.[90] These two failed auctions have no bearing on HPL's value for several reasons.

47. First, these auctions were conducted 18 months and 28 months after the Valuation Date, and were never completed. In other words, the low bids cited by Mr. Brown were *not* accepted.

48. Second, the so-called "auction process" for IDBI's HPL shares was extremely rudimentary, consisting of a newspaper advertisement published by IDBI that provided no value-relevant information on HPL. IDBI published a newspaper advertisement on September 26, 2018, seeking bids for shares in various companies. The advertisement listed only the (i) names of companies for which bids were invited, (ii) number of shares for sale, and (iii) face value of the shares. There were a total of 17 companies listed in the advertisement including HPL, and for HPL, only the following information was provided:

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89 Spreadsheet dated December 31, 2016, TCG_0064273, at cells E28, E29 of "Detailed Haldia Shareholding" tab.

90 Brown Rebuttal Report, p. 43.

(i) Haldia Petrochemicals Limited, (ii) 27,128,521 shares, and (iii) INR 10 per share.[91] The advertisement mentioned that "[e]ach bidder may conduct its own independent investigation and analysis before submitting their bids." In addition, it noted that the sale of shares was subject to right of first refusal, buy back rights or any other rights by the company/promoters or any other shareholders.[92] In summary, these were not serious auctions, as the advertisement contained very little information about the underlying companies listed, and instead contained caveats that any bid may falter for various reasons. Even if a potential bidder was interested in HPL shares, there would have been very little information publicly available about the firm. The only information that can be gleaned from the advertisement was that the face value of these shares was INR 10 per share. Given limited information, it would be difficult for an independent arm's length bidder to deviate too much from the only value information provided on the advertisement: the face value of INR 10 per share.

49. Finally, an email from Sanjay Darolia (a TCG employee) to Dr. Chatterjee on November 22, 2018—two months after the first auction was initiated—indicates that IDBI Bank was unlikely to "consider the current bid [of INR 13.05 by Sudha] as they expect price to be closer to the Book value of [INR] 80[.]"[93] This suggests that IDBI's reservation price was closer to INR 80, the book value from amalgamation.[94]

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91 Offer Inviting the Sale of Equity Shares by IDBI Bank, TCG_0163066-68, at 67.

92 Offer Inviting the Sale of Equity Shares by IDBI Bank, TCG_0163066-68, at 67.

93 Email from Sanjay Darolia to Purnendu Chatterjee re: "IDBI," November 22, 2018, TCG_0083413; Letter from Sudha Commercial Company Limited to TCG, November 21, 2018, TCG_0083414.

94 Schoar Report, p. 23.